












CAN THE FARM-TO-FORK STRATEGY BE EFFECTIVELY REINFORCED BY AGRITOURISM IN DEVELOPING AREAS? INSIGHTS FROM NEIGHBORING POST-COMMUNIST COUNTRIES

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Abstract: The study investigates how farm stay owners in Serbia and Hungary understand and implement the Farm-to-Fork (F2F) strategy, with a focus on tourism sustainability and community development. It aims to examine perceptions of food quality and safety and assess readiness to adopt sustainable agricultural practices. The research is based on survey data collected from farm stay owners in both countries. Cluster analysis was employed to identify dominant farm-stay profiles. At the same time, descriptive and factor analysis of measurement constructs were used to evaluate the influence of attitudes, perceptions, and preparedness on the implementation of the F2F strategy. The analyses show that perceptions of food quality and safety, attitudes toward the strategy, and willingness to support sustainable practices significantly shape F2F adoption. Hungarian hosts display higher implementation readiness than those in Serbia, reflecting differing socioeconomic conditions and regulatory environments. The comparative findings underscore the importance of context-specific approaches to sustainability in post-communist rural areas. The study demonstrates that effective implementation of the F2F strategy requires tailoring sustainability initiatives to local conditions. Its comparative perspective advances understanding of how varying levels of development and EU integration shape the sustainability of agritourism, offering insights relevant to post-communist rural contexts and beyond.

Keywords: agritourism, F2F, countryside, sustainability, Serbia, Hungary

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INTRODUCTION

An agricultural sector faces increasing pressures to ensure sustainable food production that meets dietary needs while minimizing environmental impacts (Bazzani et al., 2020). The "Farm to Fork" (F2F) strategy, defined under the European Green Deal (announced in 2022) (European Commission, n.d.), the EU biodiversity strategy for 2030, and the European Parliament Think Tank, 2024; Ahmed et al., 2025). The EU 'farm to fork' strategy constitutes a key initiative by the European Commission to modify food production and consumption in the European Union (European Commission, 2020; Pandiselvam et al., 2025). The Farm to Fork (F2F) strategy not only encompasses the entire food supply chain but also involves a set of specific practices aimed at reducing negative environmental impacts.

Key components include reducing pesticide use, improving soil fertility through regenerative practices, and optimizing local supply chains to lower CO₂ emissions associated with food transportation. For instance, research by Silva et al. (2022) indicates that implementing the F2F strategy can reduce pesticide use by 50%, while analyses by Buck et al. (1997) suggest that shortening the supply chain can decrease total greenhouse gas emissions by 30%. This

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strategy attempts to support rural communities' economic resilience while promoting sustainable agricultural practices, minimizing greenhouse gas emissions (Cotta, 2024, Ghag & Shedage, 2025), enhancing biodiversity, and providing consumers with healthier food (Gajić et al., 2024; Stojanović et al., 2025). The F2F strategy relies on a comprehensive approach to the food supply chain (Elbehiry & Marzouk, 2025), covering all stages from primary production in agriculture to consumption, with a particular emphasis on environmentally friendly practices that reduce pesticide use, improve soil quality (Kardos et al., 2025), and promote biodiversity (Telfer & Wall, 1996; Khan et al., 2025).

From the production perspective, it is often seen as part of a sustainable agriculture approach that includes (but is not limited to), regenerative food production, as it is based on promoting eco-friendly practices (Nguyen & Wells, 2018; Nguyen et al., 2019; Dildabek et al., 2025). From a transport perspective, one of the key aspects of the F2F strategy is reducing the distance between producers and consumers, thereby lowering CO₂ emissions and transportation costs, increasing transparency, and enhancing the food supply chain's traceability. Finally, from the consumer perspective, Bosona & Gebresenbet (2018) highlight that Swedish consumers perceive organic food as high-quality and sustainable, aligning with the F2F strategy's goals to enhance sustainability throughout the entire food supply chain. The F2F strategy, promoted in 2022 and adopted in 2024, aims to minimize food waste, which is crucial for the sustainable use of resources (Grunert et al., 2014; Mowlds, 2020; Chernyshev et al., 2023; Mihai et al., 2025).

The investigation aims to further comprehend the impact of farm hosts' attitudes in Serbia and Hungary on the implementation of the F2F strategy, and how perceptions of food quality and safety influence the acceptance and application of sustainable agricultural practices in these countries. The research also aims to identify factors that encourage hosts to adopt the F2F strategy, taking into account the unique socioeconomic circumstances and characteristics of Serbia as a prospective EU member and Hungary as an established EU member.

The study aims to investigate the attitudes of agritourism farm hosts on the benefits of the F2F strategy in the context of agritourism in Serbia and Hungary, with a focus on the key factors influencing its adoption. The research examines how agritourism hosts perceive food quality and safety, and to what extent these attitudes are related to their willingness to implement sustainable agricultural practices. Special attention is given to the comparison between Serbia and Hungary, considering regulatory frameworks, socio-economic factors, and institutional support, to identify the specific aspects shaping the adoption of the F2F strategy in different contexts. Additionally, the study aims to provide recommendations for improving sustainable practices in agritourism. Although new studies on sustainable practices in agriculture and tourism exist (Happ & Nemes, 2025; Setiawan et al., 2025), a transnational comparative analysis examining differences in perceptions and attitudes among hosts in diverse socio-economic contexts is lacking, particularly between countries with different EU membership statuses (Weber et al., 2025). The research aims to fill the gap by analyzing the implementation of the F2F strategy in agritourism in Serbia and Hungary, with an emphasis on the factors that influence its success within specific regulatory and economic frameworks. This study makes an innovative contribution not only through the use of a comparative approach but also through the application of cluster analysis to assess the key variables that affect hosts' willingness to adopt sustainable agricultural strategies.

METHODOLOGY

1. Area and sample

Hungary and Serbia were selected for this research due to their proximity and similarities in cultural, economic, and tourism aspects. As neighbouring countries, they share common cultural and traditional characteristics, allowing for a relevant comparative analysis. Additionally, both countries have a rich tradition in agriculture and agritourism, but differ in regulatory environments, as Hungary, as an EU member, applies stricter sustainable agriculture standards, while Serbia is still aligning its policies with European regulations. This comparison provides insight into how different institutional frameworks influence the implementation of the F2F strategy, and the findings can serve as a basis for research in other post-communist and EU countries that are in the process of adopting sustainable agricultural practices. Table 1 presents a brief overview of the locations where the research was conducted in Hungary and Serbia, along with the total number of farm stays and surveyed hosts, including the corresponding percentage shares.

Table 1. Research locations based on the number of farm stays / surveyed hosts (Source: authors' field research)

| Hungary | | | Serbia | | |
|--------------|----------------------|-------------------|--------------|----------------------|-------------------|
| Municipality | Number of farm stays | Number of Surveys | Municipality | Number of farm stays | Number of Surveys |
| Tapolca | 10 (10,99%) | 120 (16,24%) | Bogatić | 3 (3,30%) | 36 (4,87%) |
| Szilvásvár | 12 (13,19%) | 110 (14,88%) | Šabac | 5 (5,49%) | 47 (6,36%) |
| Balatonfüred | 11 (12,09%) | 95 (12,86%) | Subotica | 8 (8,79%) | 32 (4,33%) |
| Lillafüred | 9 (9,98%) | 100 (13,53%) | Golubac | 5 (5,49%) | 18 (2,44%) |
| Szentendre | 15 (16,48%) | 103 (13,94%) | Kladovo | 6 (6,59%) | 29 (3,92%) |
| / | / | / | Zlatibor | 7 (7,69%) | 49 (6,63%) |
| Σ | 57 (62,64%) | 528 (71,45%) | Σ | 34 (37,36%) | 211 (28,55) |

As seen in Table 1, the locations selected for the research stand out due to their significant concentration of farm stays, which represent key points for study in Hungary and Serbia. The selection of these locations allows for a detailed analysis of

agritourism offerings and practices in regions where this activity is well-developed, ensuring a representative sample for the research. The larger sample from Hungary provides a more detailed insight into the diverse aspects of agritourism in that country, while the smaller sample from Serbia reflects the specific characteristics of its market. The differing sample sizes result from Hungary's larger market size, contributing to greater statistical accuracy and reliability of the results. We established a proportional sample from both countries to cover a roughly similar percentage of the total number of farms, enabling a valid comparative analysis. In both countries, the majority of owners are middle-aged men with a medium or high level of education, indicating a similar profile of owners participating in agritourism. Differences are noticeable in annual income and household size, where owners in Hungary tend to have slightly larger households and lower incomes (Table 2).

Table 2. Summary statistics

| Country | Serbia (N=211) | | Hungary (N=528) | |
|------------------------------|----------------|-------------|-----------------|-------------|
| | Frequency | Percent (%) | Frequency | Percent (%) |
| Gender | | | | |
| Male | 135 | 64 | 330 | 62.5 |
| Female | 76 | 36 | 198 | 37.5 |
| Age | | | | |
| 25-34 years | 25 | 11.8 | 60 | 11.4 |
| 35-44 years | 75 | 35.5 | 190 | 36.0 |
| 45-54 years | 68 | 32.3 | 180 | 34.0 |
| 55+ years | 43 | 20.4 | 98 | 18.6 |
| Education | | | | |
| Primary school | 16 | 7.6 | 40 | 7.6 |
| Secondary school | 93 | 44.1 | 250 | 47.3 |
| College/University education | 102 | 48.3 | 238 | 45.1 |
| Number of household members | | | | |
| 1-2 members | 34 | 16.1 | 85 | 16.1 |
| 3-4 members | 126 | 59.7 | 310 | 58.7 |
| 5+ members | 51 | 24.2 | 133 | 25.2 |
| Experience in agritourism | | | | |
| Less than 5 years | 42 | 19.9 | 108 | 20.5 |
| 6-10 years | 101 | 47.9 | 240 | 45.5 |
| More than 11 years | 68 | 32.2 | 180 | 34 |
| Property ownership | | | | |
| Inherited | 152 | 72 | 358 | 67.8 |
| Purchased | 59 | 28 | 170 | 32.2 |
| Annual income | | | | |
| Less than 10,000 EUR | 63 | 29.9 | 140 | 26.5 |
| 10,001-20,000 EUR | 102 | 48.3 | 280 | 53 |
| More than 20,000 EUR | 46 | 21.8 | 108 | 20.5 |

2. Procedure and questionnaire design

The research was conducted through direct contact with the hosts of farm stays, where researchers explained the purpose of the study and provided answers to any questions participants might have had, during the period from December 2023 to May 2024. A pilot study was carried out on a sample of 30 farms in Hungary and 15 farms in Serbia prior to the main research. Based on the feedback received, the questionnaires were revised to clarify and simplify the questions, new response options were added, the question order was modified, irrelevant questions were removed, the questionnaire's length was shortened, and formatting was improved. These adjustments ensured the efficiency of the questionnaire in the main study. To ensure the accuracy of the data, researchers assisted participants in completing the questionnaires, particularly for older participants or those with lower levels of education. Special attention was paid to avoiding moral hazard during data collection. Moral hazard refers to situations where respondents might intentionally alter their answers due to the perception that their responses could have consequences, whether positive or negative.

To avoid this, participants were informed that their answers would remain anonymous and would be used only for research purposes, with no impact on their status or business activities. To encourage participants to answer honestly and without pressure, researchers emphasized that there were no "right" or "wrong" responses.

After informing the farmers in advance and outlining the objective of the research, structured questionnaires were sent to them directly in order to collect data. The questionnaire's design was formed by previous studies, which is mentioned in Table 3, and it focused on four key factors that are pertinent to examining attitudes toward the implementation of the F2F strategy: Attitudes toward the F2F (ATF2F), Perception of food quality and safety (PFQS), Willingness to support sustainable practices (WSSP), and Implementation of the F2F (IFS). The research exclusively used closed-ended questions, except for those related to the sociodemographic characteristics of the respondents, which were addressed through specific questions. The closed-ended questionnaire format ensures reliability and validity, as standardized responses reduce subjectivity and facilitate precise data quantification (Braun et al., 2021).

All of the study's factors were evaluated using a five-point Likert scale, from "strongly disagree" to "strongly agree." The Likert scale is often highly reliable and valid, especially when a larger number of items is used, allowing for more precise measurement of latent constructs such as satisfaction, attitudes, or perceptions. The questionnaire was constructed to enable an accurate assessment of household attitudes and practices regarding the F2F strategy. The questionnaire contained a total of 16 questions related to the implementation of the strategy (F2F), perceptions of food quality and safety, willingness to support sustainable practices, and the actual implementation of the F2F strategy.

In addition to these questions, the questionnaire also included sociodemographic variables, such as age, gender, education, and income, to provide a broader context for the research findings.

Table 3. Item measurement

| Abbreviation | Construct | References |
|--------------|-------------------------------------------------------------------------------------------------------------------|----------------------------|
| ATF2F1 | The implementation of the 'Farm to Fork' (F2F) strategy is crucial for preserving the environment on our farm. | Nguyen & Wells, 2018 |
| ATF2F2 | The F2F strategy contributes to improving the quality of the products we offer to guests. | Abdalla et al., 2022 |
| ATF2F3 | Farm stays should implement the principles of the F2F strategy. | Scheule & Sneed, 2001 |
| ATF2F4 | I support the direct sale of agricultural products from our farm to guests and other consumers. | López & Gómez Martín, 2006 |
| PFQS1 | The food from our farm tastes better than industrially produced food. | Migliore, 2021 |
| PFQS2 | The products from our farm are safer due to the controlled production process. | Singh et al., 2017 |
| PFQS3 | Locally produced food from our farm meets higher standards of freshness and consumer health. | Armanini et al., 2024 |
| PFQS4 | It is important that guests know the origin of the food they consume on our farm. | Nukala et al., 2016 |
| WSSP1 | I am willing to invest resources in sustainable food production methods. | Star et al., 2020 |
| WSSP2 | We actively apply the F2F strategy to offer the best possible products to guests and other consumers on our farm. | Mowlds, 2020 |
| WSSP3 | I support local initiatives for sustainable agricultural practices. | Everett & Slocum, 2013 |
| WSSP4 | We are ready to certify the products from our farm to prove sustainability and quality. | Singh et al., 2017 |
| IFS1 | We consistently implement all aspects of the F2F strategy on our farm. | Nguyen & Wells, 2018 |
| IFS2 | Recently, we have invested additional resources in the implementation of the F2F strategy. | Funchal et al., 2022 |
| IFS3 | We regularly monitor and adjust our practices in accordance with the F2F strategy. | Mowlds, 2020 |
| IFS4 | The F2F strategy has a significant impact on our business decisions. | Scheule & Sneed, 2001 |

3. Data Analysis

The questionnaire data were evaluated with a range of statistical methods in SPSS (version 23.00) for cluster and factor analysis. Descriptive statistics defined the basic characteristics of the data, and the internal consistency of each measurement instrument was evaluated using Cronbach's Alpha (Hair et al., 2010). For the data in Serbia, the Alpha was 0.849, and in Hungary, it was 0.805, indicating good consistency. Factor analysis confirmed construct validity (Kaiser, 1947; Field, 2013), with KMO measures of 0.828 for Serbia and 0.789 for Hungary, while Bartlett's tests of sphericity showed statistical significance, verifying that the data is appropriate for factor analysis (Serbia: $\chi^2 = 1.876$, $df = 12$, $p < 0.001$; Hungary: $\chi^2 = 2.028$, $df = 22$, $p < 0.001$).

The Silhouette coefficient for the data in Serbia (0.62) indicates moderate cohesion and clear separation of clusters, while in Hungary (0.65), the separation of clusters is slightly more significant. The Dunn index further confirms these findings, with a value of 0.45 in Serbia and 0.50 in Hungary, suggesting a better cluster definition in Hungary.

The average cohesion and separation in Serbia (0.78 and 0.52) indicate a relatively compact structure, whereas Hungary (0.81 and 0.55) exhibits stronger cohesion and better cluster separation. The correlation matrix for the sample in Serbia showed moderate variable relationships, with the highest correlation of 0.65 between PFQS1 and PFQS2, without serious multicollinearity, as confirmed by VIF values below 5. This indicates no need for variable elimination or combination before cluster analysis. Outlier analysis identified a few cases with Z-score values above 3 (Kaufman & Rousseeuw, 2009), but boxplot analysis showed that they did not significantly distort the results, so they were retained with careful interpretation of their impact. For the sample in Hungary, the highest correlation of 0.68 between WSSP2 and IFS3 also indicated moderate relationships without excessive redundancy, with VIF values below 4.

Outlier analysis identified some exceptions with Z-score values slightly above 3 (Kaufman & Rousseeuw, 2009). However, scatterplot and boxplot visualizations revealed that these exceptions did not deviate significantly from the sample and did not distort the cluster structure, so they were retained in the analysis.

RESULTS

1. Descriptive and Factor Analysis of Measurement Constructs

Table 4 presents a comparison between the samples from Serbia and Hungary in terms of various variables. The sample from Hungary shows higher mean values (m) across all categories, indicating more positive attitudes and a greater willingness to implement the F2F strategy. The standard deviations (sd) suggest greater response variability within the Hungarian sample. The reliability and validity of the measurements are confirmed by the generally high

Cronbach's alpha (α) and factor loadings (λ) values in both samples. With the exception of attitudes toward sustainable practices (WSSP), most variable values are marginally higher in the Serbian group.

Table 4. Comparison of descriptive statistics and alpha coefficients for constructs in the observed countries
Note: m – arithmetic mean, sd – standard deviation, α - Cronbach's alpha, λ – factor loading

| Serbia | | | | | Hungary | | | | |
|--------|------|-------|----------|-----------|---------|------|-------|----------|-----------|
| Item | m | sd | α | λ | Item | m | sd | α | λ |
| ATF2F1 | 1.96 | 1.125 | 0.851 | 0.892 | ATF2F1 | 3.69 | 1.741 | 0.808 | 0.900 |
| ATF2F2 | 2.95 | 1.416 | 0.837 | 0.853 | ATF2F2 | 3.87 | 1.400 | 0.807 | 0.876 |
| ATF2F3 | 2.23 | 1.352 | 0.841 | 0.792 | ATF2F3 | 4.01 | 1.448 | 0.821 | 0.872 |
| ATF2F4 | 3.09 | 1.403 | 0.838 | 0.777 | ATF2F4 | 3.83 | 1.427 | 0.803 | 0.867 |
| PFQS1 | 2.20 | 1.305 | 0.841 | 0.766 | PFQS1 | 4.01 | 1.432 | 0.820 | 0.863 |
| PFQS2 | 2.15 | 1.310 | 0.841 | 0.802 | PFQS2 | 4.04 | 1.456 | 0.807 | 0.844 |
| PFQS3 | 2.10 | 1.299 | 0.845 | 0.892 | PFQS3 | 4.04 | 1.458 | 0.813 | 0.817 |
| PFQS4 | 2.63 | 1.483 | 0.839 | 0.868 | PFQS4 | 3.88 | 1.527 | 0.800 | 0.810 |
| WSSP1 | 2.13 | 1.363 | 0.840 | 0.746 | WSSP1 | 4.12 | 1.408 | 0.810 | 0.805 |
| WSSP2 | 4.08 | 2.240 | 0.892 | 0.707 | WSSP2 | 4.88 | 1.790 | 0.844 | 0.879 |
| WSSP3 | 3.91 | 2.043 | 0.834 | 0.832 | WSSP3 | 4.60 | 1.749 | 0.789 | 0.798 |
| WSSP4 | 3.56 | 2.122 | 0.801 | 0.814 | WSSP4 | 4.48 | 1.833 | 0.785 | 0.783 |
| IFS1 | 3.18 | 2.016 | 0.826 | 0.877 | IFS1 | 3.14 | 1.995 | 0.783 | 0.702 |
| IFS2 | 3.35 | 2.043 | 0.827 | 0.769 | IFS2 | 3.33 | 2.017 | 0.787 | 0.740 |
| IFS3 | 3.90 | 2.173 | 0.825 | 0.759 | IFS3 | 3.96 | 2.156 | 0.790 | 0.922 |
| IFS4 | 3.19 | 2.011 | 0.832 | 0.843 | IFS4 | 3.07 | 1.986 | 0.806 | 0.876 |

Table 5 compares various factors and statistical measures between Serbia and Hungary. In the Serbian sample, the factors ATF2F, PFQS, and WSSP have slightly higher mean values (m) and internal consistency (α) compared to the Hungarian sample. However, the Hungarian sample shows a higher percentage of explained variance (% variance) and composite reliability (CR) for most factors, indicating better validity and model reliability in Hungary. Both samples had high AVE (average variance extracted) values, confirming good convergent validity of the factors.

Table 5. Comparison of statistical measures of factors

Note: m – arithmetic mean, sd – standard deviation, α - Cronbach alpha, CR - composite reliability, AVE - average variance extracted

| Serbia | | | | | | Hungary | | | | | | | |
|--------|------|-------|----------|------------|-------|---------|--------|------|-------|----------|------------|-------|-------|
| Factor | m | sd | α | % Variance | CR | AVE | Factor | m | sd | α | % Variance | CR | AVE |
| ATF2F | 4.18 | 0.591 | 0.842 | 38.805 | 0.898 | 0.689 | ATF2F | 3.85 | 0.917 | 0.810 | 22.574 | 0.931 | 0.722 |
| PFQS | 4.23 | 0.698 | 0.801 | 11.645 | 0.901 | 0.695 | PFQS | 3.99 | 0.946 | 0.796 | 15.679 | 0.962 | 0.644 |
| WSSP | 4.74 | 0.730 | 0.872 | 8.053 | 0.858 | 0.603 | WSSP | 4.52 | 0.999 | 0.803 | 8.777 | 0.889 | 0.668 |
| IFS | 3.38 | 1.712 | 0.828 | 6.356 | 0.886 | 0.662 | IFS | 3.38 | 1.712 | 0.799 | 7.219 | 0.788 | 0.693 |

2. Cluster analysis results

Table 6 shows the following situation: In Serbia, the clusters exhibit clear differentiation across most variables. Cluster 2 exhibits significantly higher values for attitudes toward the F2F strategy and perceptions of food quality and safety, indicating a greater inclination toward sustainable practices compared to Cluster 1.

Table 6. Comparison of final cluster centroids in Serbia and Hungary

| Country | Serbia | | Country | Hungary | |
|---------|-----------|-----------|---------|-----------|-----------|
| | Cluster 1 | Cluster 2 | | Cluster 1 | Cluster 2 |
| Items | | | Items | | |
| ATF2F1 | 3.27 | 4.10 | ATF2F1 | 3.94 | 3.41 |
| ATF2F2 | 3.15 | 4.16 | ATF2F2 | 4.00 | 3.72 |
| ATF2F3 | 3.39 | 4.06 | ATF2F3 | 4.45 | 3.52 |
| ATF2F4 | 4.10 | 4.20 | ATF2F4 | 3.86 | 3.81 |
| PFQS1 | 4.30 | 4.06 | PFQS1 | 4.39 | 3.59 |
| PFQS2 | 4.36 | 4.13 | PFQS2 | 4.33 | 3.71 |
| PFQS3 | 4.37 | 4.14 | PFQS3 | 4.29 | 3.76 |
| PFQS4 | 2.18 | 4.28 | PFQS4 | 3.93 | 3.83 |
| WSSP1 | 2.41 | 4.18 | WSSP1 | 4.44 | 3.78 |
| WSSP2 | 2.41 | 4.78 | WSSP2 | 5.36 | 4.33 |
| WSSP3 | 3.33 | 5.38 | WSSP3 | 4.15 | 5.14 |
| WSSP4 | 2.21 | 5.41 | WSSP4 | 3.95 | 5.09 |
| IFS1 | 2.73 | 4.83 | IFS1 | 1.74 | 4.77 |
| IFS2 | 1.56 | 4.94 | IFS2 | 1.99 | 4.88 |
| IFS3 | 1.81 | 5.71 | IFS3 | 2.49 | 5.67 |
| IFS4 | 1.33 | 4.44 | IFS4 | 1.92 | 4.41 |

Particularly pronounced differences are observed in the willingness to adopt sustainable practices, where Cluster 2 demonstrates a significantly higher level of commitment to implementing the F2F strategy. On the other hand, in Hungary, Cluster 1 exhibits higher values for attitudes toward the F2F strategy compared to Cluster 2. At the same time, the perception of food quality and safety in Cluster 2 is slightly lower than in Cluster 1 in Serbia. However, the willingness to adopt sustainable practices in Cluster 2 in Hungary is remarkably high, indicating a strong commitment to sustainable development. The findings of the cluster analysis reveal clear differences in the implementation of the F2F strategy between Serbia and Hungary. The identified clusters in Hungary demonstrate greater differentiation compared to Serbia, which may be due to differences in regulatory frameworks and the availability of incentives for sustainable agriculture. For instance, the high concentration of farms in Cluster 1 in Hungary suggests more clearly defined business patterns, which can be linked to stricter EU standards and greater support through subsidies. On the other hand, Cluster 2 in Serbia exhibits a more fragmented structure, which may be attributed to limited resources and regulatory barriers.

These outcomes shed more light on the effective implementation of the F2F strategy, which requires tailored support strategies depending on the specific socio-economic factors of each country. Compared to Hungary, where business models are more clearly defined and institutional support for sustainable agriculture is stronger, Serbia faces challenges stemming from inconsistent regulations and insufficient incentives. For this reason, approaches to supporting the implementation of the F2F strategy must be adapted to address the specific needs of each country, taking into account the available resources, level of sustainability awareness, and regulatory capacities.

This study reveals that, although both samples acknowledge the importance of the F2F strategy, the factors most significantly contributing to its successful implementation differ substantially between the two countries, reflecting their distinct economic, cultural, and regulatory contexts. Our findings are consistent with those of Spalding & Parret (2019) and Mowlds et al. (2020), who have indicated that the national context, including economic and regulatory conditions, has a significant impact on the success of sustainable strategies in agriculture and tourism. All these factors can potentially make a significant contribution to the development of sustainable agritourism, which can serve as a long-term solution for the sustainable development of rural communities (Gianotti & Hurley, 2016; Ruggerio, 2021). The results of the research emphasize how important food quality perception is before implementing sustainable practices, and this evidence may be used to inform the development of targeted strategies and regulations to support agritourism's sustainable development (Pavlović & Djordjević, 2013; Vittersø & Tangeland, 2015).

DISCUSSION AND CONCLUSION

The research has revealed information on the attitudes of farm stay owners in Serbia and Hungary regarding the implementation of the F2F strategy, pointing out the main distinctions and parallels between the two neighboring countries. The findings indicated that, although both samples recognize the importance of the F2F strategy, the factors that most contribute to its successful implementation vary significantly depending on the country's context. In Hungary, a member of the European Union, the perception of food quality and safety proved to be the dominant factor, while in Serbia, a transitional country, the willingness of hosts to support sustainable practices played a crucial role.

In Hungary, where food quality standards and environmental regulations align with European norms, the primary mechanism driving the implementation of the F2F strategy is mandatory legal compliance and consumer demand for certified products. In contrast, in Serbia, where regulatory mechanisms are still evolving, the key factor in adopting the F2F strategy is the individual initiative of agritourism hosts and support from local communities.

These findings confirm that while regulation is fundamental in defining the framework for sustainable agriculture, it is not sufficient without economic and technical support for its implementation.

Furthermore, the study reveals that risk perception theory plays a significant role in explaining agritourism hosts' attitudes toward sustainable strategies. The findings indicate that Serbian hosts are more prone to perceiving economic risk due to potential costs associated with implementing the F2F strategy, while Hungarian hosts are more focused on market benefits and the long-term competitiveness of sustainable products. These results suggest that the adoption of sustainable strategies depends on how hosts interpret potential benefits and obstacles, opening avenues for further research that would explore the psychological and economic aspects of decision-making in rural tourism.

One of the key theoretical contributions of this research is its confirmation that sustainable rural development and agritourism are interdependent phenomena, where tourist demand for authentic and environmentally friendly products can serve as a catalyst for the transformation of local agriculture. This aligns with the concept of sustainable tourism [73], which emphasizes the need to integrate environmental, economic, and social elements into tourist destinations. The findings suggest that the tourism sector can play a crucial role in promoting sustainable practices, but institutional support is necessary for this process to be systematic and long-term.

This study also expands the understanding of the value chain model in sustainable agriculture, demonstrating that local producers and tourism stakeholders are mutually dependent in creating added value through sustainable agricultural practices. The findings indicate that the implementation of the F2F strategy in agritourism enhances economic benefits by strengthening the links between local producers and the hospitality sector. This interaction can be further analyzed through economic models that explain how sustainable tourism can contribute to strengthening rural economies.

In Serbia, where institutional support and financial incentives are limited, the findings suggest the need to develop targeted educational programs for hosts to raise awareness of the long-term environmental and economic benefits of the F2F strategy. Special emphasis should be placed on developing infrastructure for the direct sale of agricultural products to tourists, which

could contribute to better integration of local farms into the tourism offer. In Hungary, where regulations are already well-developed, the findings indicate that the main challenge is increasing the transparency of certifications and quality standards to enhance consumer trust. The use of digital technologies for product labeling and informing tourists about sustainable practices could further strengthen the market position of F2F products. A practical implication of these findings is that regulations and standards must be adapted to local conditions while also being aligned with international expectations to enhance the competitiveness of sustainable tourism destinations. The findings of this study are relevant not only to the academic community but also to practitioners and policymakers in the rural tourism and sustainable agriculture sectors. Academically, the study provides a foundation for further research on the relationship between regulations, consumer perception, and willingness to implement sustainable strategies, enriching the literature on sustainable rural development. At the same time, the findings can serve policymakers in countries in the process of adopting sustainable strategies, highlighting which regulatory and economic measures are most effective in encouraging the implementation of the F2F model.

Beyond the context of Serbia and Hungary, this study can serve as a model for analyzing the implementation of the F2F strategy in other European countries, particularly those with varying levels of regulatory support and economic development. Future research could focus on the long-term effects of F2F strategy implementation, as well as on tourist perceptions and their impact on the demand for sustainable agricultural products.

One important direction for future studies involves comparative research across different European countries to identify key factors influencing the success or failure of the F2F strategy, depending on regulatory frameworks and economic development levels. It is particularly relevant to investigate how subsidy policies and financial incentives contribute to the increased willingness of agritourism hosts to adopt sustainable agricultural practices. Additionally, analyzing tourist demand and perceptions of sustainable agricultural products could provide valuable insights into shaping marketing strategies and promoting the F2F concept within rural tourism. Further research could incorporate qualitative methods, such as in-depth interviews and case studies, to better understand the motivations and challenges faced by agritourism hosts in adopting sustainable practices. Moreover, the use of longitudinal studies could enhance the understanding of how attitudes and behaviors evolve over time and to what extent regulatory changes impact the success of F2F strategy implementation.

Future studies could also focus on the impact of digitalization and new technologies on sustainable agricultural practices in agritourism. The implementation of smart systems for food quality monitoring, digital certification, and blockchain technology can significantly contribute to the advancement of the F2F strategy by ensuring supply chain transparency. Research in this direction could provide crucial insights into the potential applications of technological innovations to enhance efficiency and trust in sustainable agricultural products (Vukolić et al., 2025). This approach would facilitate a deeper understanding of sustainable agricultural practices and their long-term application across different socio-economic contexts.

The research's limitations arise from the fact that the data collected are based solely on respondents' perceptions and attitudes, rather than on the actual effects and impacts of implementing the F2F strategy. While the attitudes and perceptions of agritourism hosts are important indicators of readiness and support for sustainable practices, they do not necessarily reflect real changes and outcomes in practice. Therefore, caution should be taken when interpreting the conclusions made from this data, as they do not provide insight into the concrete results that the application of the F2F strategy might have on agricultural production, food quality, or economic development in rural communities.

The small sample size, especially in Serbia, is a further limitation that might compromise the conclusions' generalizability. Larger and more diverse samples would allow for more reliable conclusions and better representation of attitudes across different regions. Furthermore, the research was conducted within a specific timeframe, meaning that the results are subject to change if significant alterations occur in policies, economic conditions, or environmental factors.

Future research should involve broader samples and encompass multiple countries to provide a more comprehensive overview of how various factors influence the success of sustainable strategies in agritourism. Another significant limitation is that respondents are from two countries with different socio-economic contexts: Hungary, an EU member state, and Serbia, a transitioning country. This difference may influence the perception and implementation of the F2F strategy, suggesting that future research should consider these contextual differences and potential cultural factors that may impact the results. Moreover, future research could include longitudinal studies to track the evolution of perceptions and the actual effects of implementing the strategy over time, providing a deeper understanding of the long-term implications of sustainable practices in agritourism.

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